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VARIOUS.

PHOTOGENIC AND PHOTOGRAPHIC LAMP.

Two chemists belonging to M. Dumas' laboratory, MM. B. Delachanel and A. Mermet, have together made a very useful discovery, which will open a new way to the practice of photography, by rendering it possible to operate at all seasons, at any hour, and in any place. They have discovered a new photogenic or actinic light, to which they have succeeded in giving permanency. When bin-oxide of nitrogen containing vapour of sulphide of carbon is inflamed within a glass phial, a most dazzling light is produced, of a beautiful blue tint, which would seem to indicate its richness in chemical rays, and in fact it causes the instantaneous explosion of the chlorine and hydrogen mixture. This discovery and this first experiment led to the construction, by these two chemists, of the sulpho-carbon lamp, by means of which they are enabled to obtain the above flame in a continuous manner. It is composed of a glass bottle with two tubulures, of a capacity of about half a litre. This is filled with fragments of spongy coke, or better still with bits of dried pumice-stone, soaked in sulphide of carbon. A tube passes down the central tubulure to within about $\frac{1}{8}$ inch of the bottom. In the other tubulure is a glass or metal tube of about 8 in. long and of large diameter, which is filled with iron turnings strongly packed, which fulfils the part of a safety wire gauze, by preventing the flame from flying back into the reservoir and causing explosion. A small quantity of bin-oxide of nitrogen is introduced into the bottle and the gaseous mixture is conducted by an india-rubber tube to a sort of Bunsen's burner, from which the gas-pipe has been removed together with the conical regulator; this burner is also completely filled with iron turnings.

The bin-oxide of nitrogen, which is generally obtained from the decomposition of nitric acid by copper, can be produced more economically by the action of iron upon a mixture, in suitable proportions, of nitric and sulphuric acids. The apparatus consists of two flasks, one of which contains pieces of broken porcelain upon which are placed fragments of bar iron, the other is filled with the mixture of the acids; the communication is established by a thick rubber tube attached to the lower tubulures; lastly, a cock, passing through the stopper of the flask containing the iron, serves to regulate the exit of the gas. With an apparatus of suitable dimensions, a dazzling flame of 10 in. in diameter and absolutely continuous is obtained. M. Frank de Villecholes, one of our most skilful photographers, asserts that the photogenic power of this flame is superior to that of the magnesium light; that it is twice as great as the oxy-hydrogen, and three times that of the electric light. These combined advantages render it highly probable that the sulpho-carbon lamp will be called upon to render great services for reproductions and enlargements of photographs, and for microscopic objects, &c. &c.

Practical Magazine.

CEMENT FOR CHINA, GLASS, &c.

To one ounce of gum-mastic add as much spirit of wine as will dissolve it. Soak one ounce of isinglass in water till it is quite soft; then dissolve it in pure rum or brandy till of the consistence of glue. To this add one quarter ounce of gum-ammoniac well rubbed and mixed. Put now the two mixtures together in a vessel over a gentle heat till properly united, and the cement is ready for use. It must be kept in a phial well-stopped, and when about to be used, it ought to be set in boiling water to soften.

Practical Magazine.

BLEACHING PAPER PULP.

P. de Wilde finds that an admirable material for paper pulp can be obtained from straw, esparto grass, wood shavings, &c., by first treating the moistened material with gaseous chlorine, whereby a

yellowish orange tint is communicated, then boiling with water, whereby much hydrochloric acid is dissolved out, and finally treating with a caustic soda ley containing one-tenth as much soda as the weight of original matter operated on; the liquor browns, whilst the matter softens and the fibres become disintegrated; a grey pasty substance is thus obtained which can be bleached readily by chloride of lime (1 litre of solution at 1° B. for 100 grammes of original matter) yielding fibres of silky lustre and irreproachable solidity.

Notwithstanding a considerable saving in bleaching powder and in alkali effected by this process, it does not seem to be of a very practical nature; the cost of the gaseous chlorine is considerable, the manipulations are much more complex than in the ordinary process of heating under pressure with soda ley, whilst the regeneration of the spent alkali is less complete.

Bulletin Société Chimique de Paris.

COLOUR PRINTING.

W. M. Halbert patents the use of papers of any of the various colours for the printing of news-papers and books from the ordinary types or stereotyped plates, with any other coloured inks or liquid dyes which would contrast with the colour of the paper; the letterpress being printed with the complementary colour, namely:— On a red paper the letterpress is printed in green, and vice versa; on a blue ground the letterpress is printed in orange, and vice versa; on a yellow ground the letterpress is printed in violet, and vice versa; on a violet red the letterpress is printed in yellowish green, and vice versa; on a violet blue the letterpress is printed in orange yellow and vice versa; on a greenish blue the letterpress is printed in reddish orange, and vice versa. As equal proportions of the three primary colours can produce white, black is complementary with any of these colours; therefore black grounds are used for printing with any of the other coloured inks or dyes, or vice versa. The letterpress may also be printed on the coloured grounds with acids, which would extract the colour from the paper and leave the letterpress white.

Practical Magazine.

SOUTH KENSINGTON.

The Museum of South Kensington has made the important acquisition of a variety of art objects from Persia, collected by Mr. Murdoch Smith, superintendent of the telegraphic establishment in that country. He has sent over a large collection of the siliceous glazed earthenware of Persia, among which are bowls decorated with blue and black flowers, the sides with a pierced pattern filled in with transparent glaze, the "grains de riz" of the French writers, imitated by the Chinese, and reproduced at the manufactory of Sèvres. There is another specimen, also perforated, of drab glaze. Other objects are — water bottles of bulbous form decorated with brown metallic lustre and rose-water sprinklers (Golabpash), with richly-engraved metal mountings; a number of dishes for rice, from Kashan, with decorations of the brightest blue, one with the typical deer, showing its Chinese derivation, others with green glaze; and rasps for scraping the palms of the hands and soles of the feet in the bath, made in the forms of diminutive ducks and slippers. The examples of metal work are most elaborate, especially two tall cylindrical pots, probably designed for incense, and some plates of a highly sonorous metal, giving out the clearest, most silvery sounds, are inlaid with pure gold. The other specimens consist of various pieces of marquetry and large wooden spoons, used for sherbet, most delicately carved. This valuable collection has been acquired at a really nominal cost.

Academy.